- Blackwood, W., et al., Brain, 1969, 92, 897.
 Harrison, M. J. G., in Tenth Symposium on Advanced Medicine, p. 215, ed. J. G. G. Ledingham, p. 215. London, Pitman Medical, 1974.
 Fields, W. S., et al., Journal of the American Medical Association, 1970, 211, 1993.
 Theres American Symposium 1973, 178, 262.
- Thompson, J. E., Annals of Surgery, 1973, 178, 263.
 Millikan, C. H., Stroke, 1971, 2, 201.

- Fisher, C. M., Archives of Ophthalmology, 1952, 47, 167.
 Skinhøj, E., Høedt-Rasmussen, K., and Paulson, O. B., Neurology, (Minneapolis), 1970, 20, 485.
 Du Boulay, G. H., British Journal of Hospital Medicine, 1973, 10, 258.
 Marshall, J., Lancet, 1971, 1, 719.
 Walter, P. F., Reid, S. D., and Kass Wenger, N., Annals of Internal Medicine, 1970, 72, 471.

Contemporary Themes

Emigration of Doctors: A Problem for the Developing and the Developed Countries. Part I

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Many developed countries such as the United Kingdom, North America, Australia, and New Zealand rely heavily on a supply of foreign trained doctors, especially from developing countries such as India, Pakistan, and Sri Lanka, to man their health services. The latter countries, alarmed by the drain of trained personnel, are now taking steps to prevent their doctors from leaving. The withholding of travel documents, the imposition of compulsory periods of service after qualification, crippling financial and service bonds, and even threats of prosecution¹ are now being used by some developing countries to stop the exit of doctors.

It seems likely that the effects of these steps even if successful will only be temporary, since restrictive measures rarely succeed beyond a certain period of time. As they fail, even more restrictive measures will undoubtedly be introduced, which in turn would temporarily stem the outflow and then cease to be effective. These stop-gap measures offer no long-term solution to the major problem. Even for the (short) time during which they are effective they will—as has happened in Sri Lanka—only create a group of disgruntled and dissatisfied doctors who are of little use in the running of an efficient Health Service in these developing countries.

In the developed countries, if restrictive measures taken by the developing countries were to succeed even temporarily, the sudden cessation of the steady inflow of foreign-qualified doctors is likely to create problems in the staffing of some of the hospitals which rely heavily on them.

Recently, a team of international experts made a detailed study of the problem of the "brain drain" and collected a mass of data on the problems facing the Colombo Plan countries.2 Despite this they failed to formulate a plan that would satisfy the needs of both the developed and the developing countries, which is the only permanent solution to this world-wide problem.

This paper is based on 14 years' experience of undergraduate and postgraduate medical education and medical practice in England with a knowledge of the requirements of the Health Services in the West and six years of medical teaching and consultant practice in Sri Lanka. It is hoped that this analysis will throw some light on the problem so that a long-term solution can be found which could benefit both the developed as well as the developing countries.

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Magnitude of the Problem

Though the immensity of the problem is widely appreciated, a few figures are worth quoting in order to emphasize the dependance of some developed countries on the developing ones and the losses incurred by the latter.

RECIPIENT COUNTRIES

Though some countries such as Britain, Canada, and New Zealand are "donor" countries to the United States, from the point of view of the developing countries they act as "recipients."

United States.—In 1971 alone, 22 000 Asian professional and technical people, most of whom were engineers, teachers, nurses, doctors, and dentists, migrated from their developing countries to the United States.3 The number of foreign medical graduates entering the United States annually increased from 308 in 1950 to 2307 in 1969.

Canada.—Not only are a third of the doctors in Canada foreign-trained but, while the output of the Canadian medical schools has only slightly increased, the total number of immigrant doctors in Canada has rapidly increased and now outnumbers those trained in Canada. In 1967 only 1016 doctors were trained locally while 1277 migrated into Canada, by far the largest source being Asia.4

United Kingdom.—In 1969, of a total stock of 66 000 active doctors, 15 000 (23.5%) were estimated to have qualified overseas, of whom two-thirds came from the developing countries.2 There is an even greater dependence on foreign graduates by the hospital services in England and Wales, where in 1969 33.4% of all hospital staff, and over 50% of the registrars and about 66% of the senior house officers, were overseas doctors.⁵ In 1971, 577 doctors migrated to the United Kingdom mainly from the developing countries. In that year only 2800 medical students were taken into all of the many medical schools in Britain. The immigrant doctors were therefore equivalent to the output of several British medical schools. During the fiveyear period 1962-7 there was an average annual net loss of some 320 British or Irish born doctors.6 The current figure is about 400. Most of them are being replaced by overseas doctors. Of an annual inflow of about 3000 overseas doctors who find employment in the National Health Service only 2300 leave, a net gain of 700 overseas doctors a year. These figures emphasize the enormous turnover and the dependence of the National Health Service on these doctors, and the chaos that might result if the supply of foreign doctors were to cease suddenly (see below).

Australia.—From 1966 to 1971 a total of 2461 well-qualified people from the Colombo Plan countries entered Australia, 60% of whom took up residence.² In 1969, 310 doctors entered Australia, of whom over a third were from the British Isles. Inspection of the trend between 1962 and 1969, however, showed that there was a gradual fall in the number of doctors arriving from the British Isles and a marked increase in those arriving from the "other countries," which includes Asia. Thus in 1963, out of a total of 217 migrant doctors 132 (60·8%) came from the British Isles, while in 1969, though the total number of migrants had increased to 310, only 111 (35·8%) came from Britain. The corresponding contribution from "other" countries was 44 (20·3%) in 1963 and 159 (51·3%) in 1969.

New Zealand.—The relative lack of opportunity and facilities for pure research in New Zealand may result in relatively few immigrants to that country. However, the preference given by that country to highly qualified applicants results in a heavy drain of doctors from the developing countries. Of the 108 doctors who left Sri Lanka in 1971-2 16% emigrated to New Zealand, and with restrictions being placed on the entry of doctors into the United Kingdom it is likely that the migration to New Zealand will increase.

DONOR COUNTRIES

India.—Precise data on the emigration of professional personnel are lacking. An estimate by the Institute of Applied Manpower Research (of India)⁷ was that at the end of 1967 some 11 000 Indian doctors (11% of those at home) were working abroad.² This is almost certainly an underestimate, since it is based only on the number of passport applications from 1960 to 1967.

Pakistan.—The emigration problem in Pakistan is serious. During the five-year period 1962-6 2032 doctors left Pakistan for employment abroad, and probably less than 15% returned.8 The net loss constituted about 50% of the total output of the Pakistan medical schools.

Sri Lanka.—Though the exact number of doctors who have left this country over the years is unknown, an approximation can be made. The medical school in Colombo (established in 1870) has an average output of about 150 doctors a year, and the new school at Peradeniya (first output in 1966) turns out 100 doctors per year. With a stock of some 2500 doctors in 1948 and an output of 4550 doctors over the past 25 years, and with a 10% reduction for mortality and retirement, there should be about 6345 doctors in the island. The most recent census established a figure of 3251 doctors, a loss of about 3000 doctors over the past 25 years. This is an average loss of nearly 120 doctors a year, which is the entire output of one of the two medical schools in the country. The validity of this deduction has recently been confirmed when a study of the emigration of doctors during the year May 1971 to April 1972 showed a loss of 108 doctors, 97 of whom were to the developed countries.2

Problems Facing the Developing Countries

These depend on whether or not a particular country trains a sufficient number of doctors for its needs.

Developing countries that do not train an adequate number of doctors—for example, some African and Middle Eastern countries.

The problem facing these countries is a competition with the West for doctors, who are usually trained in other developing countries. They have to offer even higher salaries and more attractive terms of service than those offered by the developed countries to make up for the poorer conditions of work. Though some of the richer Middle Eastern countries may be able to do this, the poorer countries are understaffed with doctors, since they are unable to afford these high salaries. Needless to say, the shortage of doctors is detrimental to the running of their health services.

Those developing countries which train an adequate number of doctors—for example, Sri Lanka.

Some developing countries train as many doctors as they can afford to employ. In 1969, with a population of 12·27 million, Sri Lanka had a stock of 3569 doctors trained in Western medicine (1 per 3500 population). With a projected population for 1976 of 14·51 million¹º Sri Lanka needs about 5000 doctors to maintain a ratio of 1 per 3000 population, which has been considered satisfactory in terms of our economy.¹¹ This means an output of 1500 doctors over seven years. With two medical schools which train 250 doctors a year, we produce as many doctors as we can afford to employ provided we can retain the doctors we train.

Why Doctors Leave the Developing Countries

A POOR SALARY

This has often been claimed to be the sole reason why doctors leave or are reluctant to return to a developing country. The implication is that since poor salaries are a reflection of the poor economy (which cannot be improved in the foreseeable future) the "brain drain" cannot be solved. This is a nihilistic attitude that does not take into consideration several important points. It is a fact that there are very few countries in the world where doctors and other professionally qualified people earn less than they do in India and Sri Lanka. Despite these poor salaries there are today 750 doctors in Sri Lanka who have a postgraduate qualification, usually a British diploma, and whose median age is 45.4 years.9 It is difficult to believe that these doctors remain in the country because they are unable to get senior appointments abroad (as many of their colleagues have done). If money was all that a doctor wanted, there would be no doctors left in Ceylon. A poor salary is certainly an important factor but is by no means the only reason why doctors leave the developing countries.

FAMILY RESPONSIBILITY (FINANCIAL)

A different aspect of this financial problem facing the younger doctors is family responsibility, which is taken much more seriously in an Eastern society. Here the older members of the family as a matter of course look after the education and welfare of the younger members of the family and their parents. It may not be possible to meet these commitments except by earning abroad. The important point is that once these obligations are over, a doctor might well be prepared to return even to a very much lower salary, provided his conditions of work are satisfactory.

POOR CONDITIONS OF WORK

No doctor who qualifies in a developing country expects to find the facilities for work that are found in developed countries. He does, however, expect to find certain minimum requirements such as an adequate supply of essential drugs, a simple side laboratory (so that he can practise the science he has learned), and some place to live in and have his meals. The first disappointment is when full of enthusiasm he applies for a post he is entitled to on his merits and finds that, owing to nepotism and favouritism, another gets the post and he is sent where he does not want to go. Despite this, determined to prove himself, he goes to his new place of work and finds no drugs, no facilities even for a simple urine test, and no place to live in. To make matters worse, he meets a stone wall of apathy from administrators who either do not want to know or care to find out what actually goes on in these hospitals. The last straw is political interference (to an extent which is unknown in the West), when attempts are made to enforce discipline or clean up corruption. The stage is now set for his departure.

POSTGRADUATE STUDY

Leaving a country to obtain postgraduate qualifications and training is a common reason for departure among the newly qualified. A study in Canada on 197 young immigrant doctors showed that 74% of them had left home to acquire advanced training. This is an excellent reason which should be encouraged by the authorities if the doctors subsequently return to their native country. Many of them would undoubtedly do so (at least for a period) if the terms of re-employment were attractive. Instead of encouraging such attempts to advance their knowledge, every effort is made to hinder their departure at this stage, thus adding to their frustration and increasing their determination to leave at the earliest opportunity, often never to return. This shortsighted policy has cost this country many young and enthusiastic doctors who are now manning the health services of foreign countries.

Doctors who leave the developing countries in search of postgraduate education will naturally go to where such instruction is better organized. The lack of training facilities in junior hospital posts in England was commented on adversely by the Royal Commission on Medical Education in 1968.¹³ This must have a major role, not only in the migration of young British doctors but also in the recent preference given to the United States by doctors emigrating from Sri Lanka, despite our close connexions with Britain.

EDUCATION OF CHILDREN

A potent cause of departure, especially among those with children of school-going age, is the change in the educational policy in this country and the change in the medium of instruction from English to the national languages even at university level. Many educated Ceylonese feel that, however politically expedient these changes may be, they are detriment to their children's education, and prefer to educate their children in a medium where the finished product will have world-wide recognition.

Why Doctors Remain in Developing Countries

Many doctors remain in Sri Lanka simply because of legislation which prevents their departure (see below). However, there are many who could leave the country but are nevertheless still here. It is of interest to look at the reasons for which they stay, since these may also be the reasons for which doctors who are now abroad may return.

FAMILY TIES

Family ties and the desire to live and work in their own country and have their children brought up in an environment to which they belong are strong reasons which keep doctors in their country despite a world demand for them.

RACIAL DISCRIMINATION

Some fear racial discrimination (real or imaginary) in other countries and prefer to live and work in an environment in which they believe there is no discrimination.

OTHER REASONS

To the more enthusiastic and to those who have seen the practice of medicine abroad the problems in the developing countries are exciting and a challenge. To the less enthusiastic the tempo of life and the climate are much easier in the tropics and are an added incentive to stay.

Why Doctors do not Return Home after Training Abroad

The emigration of doctors will not be a serious problem if they return after a period abroad. In fact this may be more desirable, since it results in a doctor with relatively little experience leaving the country and one with much more experience and training returning. The seriousness of the problem can be appreciated when it is known that with the exception of those who have been sent abroad for training by the Government, and are therefore forced to return, of the hundreds of doctors who have been trained in Sri Lanka hardly any have returned. This is unlike the situation in Britain, where, despite an average gross outflow of nearly 1000 doctors, half now return.⁵

In a few instances non-return is due to a doctor being unable to fit into his previous environment owing to the acquisition of skills which he cannot use there. However, the major factors which discourage their return are restrictive measures on their subsequent movements once they return and the poor terms of re-employment. In Sri Lanka the appointment to a senior medical post is almost entirely dependent on the number of years the doctor has worked in the health service of this country rather than on his qualifications, experience, or achievements abroad. It is unreasonable to expect those who have obtained specialist qualifications and experience abroad at personal cost (rather than on a government scholarship) to return to appointments which are not in keeping with their experience and at a lower salary than those of their colleagues in the same country. This results not only in a non-return of doctors but in the nonreturn of those whom the developing countries most needthat is, the qualified and experienced doctors who could train others in their own country.

(Part 2, with references, will appear next week.)

Any Questions?

We publish below a selection of questions and answers of general interest

Sodium Amylobarbitone and Pre-eclampsia

Sodium amylobarbitone has been used for many years in the treatment of toxaemia of pregnancy but I know of no controlled trials indicating whether or not it is of any benefit. Can you advise me on the evidence for this treatment?

Not really. It is an empirical treatment sanctioned by usage rather than scientific evidence. It is right that it should be called into question. Probably it all began when the Stroganoff treatment for eclampsia was introduced. This showed the benefits of heavy sedation, indeed almost of anaesthesia. Probably this idea was carried over into the management of the lesser degrees of pre-eclampsia. The management of pre-eclampsia involves rest, sedation, diuretics, hypotensives, and delivery—and the greatest of these is delivery. All medical therapy buys time until the fetus is mature enough for safe delivery. Diuretics and hypotensives are not greatly used except in severer cases, so the bed